

AMENDMENT UNDER 37 C.F.R. § 1.116
Appln. No.: 09/624,222

Attorney Docket No.: Q60045

REMARKS

Claim 1 has been amended in order to more particularly point out and distinctly claim the Applicants' invention. Attached hereto is a terminal disclaimer to obviate a provisional double patenting rejection based on co-pending Application No. 09/734,680.

Claim 1 is pending in the present application.¹ Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as obvious based on a combination of claim 1 of the U.S. pending patent application 09/978,548 (US-PPA '548) in view of Kato (DE Patent No. 19922794); claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as obvious based on a combination of claim 1 of the U.S. pending patent application 09/734,680 (US-PPA '680), Kato, Adachi (Japanese Laid-open Patent Application No. 09103052) and Tanaka (U.S. Patent No. 4,876,473); and claim 1 is rejected under 35 U.S.C. § 103(a) as obvious based on a combination of Kusase (U.S. Patent No. 6,147,432), Adachi and Kato. Reconsideration and removal of these rejections are respectfully requested on the basis of the present amendment to the claims and the following remarks.

With respect to a provisional double patent rejection, Applicants file a terminal disclaimer to moot the provisional double patenting rejection based on US-PPA '680. Since US-PPA '548 is the divisional application of this application, the rejection of claim 1 based on claim 1 of US-PPA '548 is moot because claim 1 was cancelled in US-PPA '548. It is respectfully requested that the provisional double patenting rejections of claim 1 be withdrawn.

¹ Claims 2-10 are being prosecuted in the divisional application (US-PPA'548).

While Kato discloses a pair of semi-phase-windings each having a pair of wave-coil units where each of the pair of coil units intercrosses each other to alternately occupy an inner layer and an outer layer in a slot depth direction, end portions 23-28 extend outward at one side of one end of the main member (see Fig 5). Therefore, connection work is difficult at those end portions, because they are close to each other. On the contrary, end portions of each strand of wire extend outward, respectively, at both sides of both ends of the wire-strand group. This is advantageous for a connecting function in that the end portions of each strand of wire can be connected easily. Applicants' claim 1 has been clarified to highlight this feature and the structure of the winding portions. These features are clearly described on page 10, lines 16-33, of the present specification and in the drawings.

The further reference to Adachi merely discloses the conventional stator core with an abutting portion extending axially for forming the stator core into an annular shape. No suggestion is made in Adachi of end portions of each strand of wire extending outward, respectively, at both sides of both ends of the wire-strand group.

None of the references or their combination discloses end portions of each strand of wire respectively extending outwards at both sides of both ends of the wire-strand group as called for in the present amended claim 1. Thus, it is respectfully submitted that the combination of Kusase, Adachi and Kato does not render claim 1 obvious over these references.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

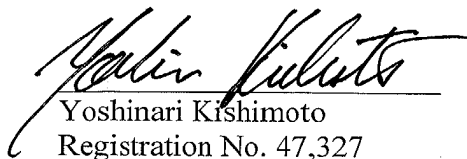
AMENDMENT UNDER 37 C.F.R. § 1.116
Appln. No.: 09/624,222 .

Attorney Docket No.: Q60045

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claim is amended as follows:

1. (Amended) An alternator comprising:

a rotor for forming north-seeking (N) and south-seeking (S) poles alternately about a rotational circumference; and

a stator comprising:

a stator core surrounding said rotor; and

a polyphase stator winding installed in said stator core,

said stator core being formed with a number of slots extending axially at a predetermined pitch in a circumferential direction and being provided with an abutting portion extending axially, said abutting portion making said stator core into an annular shape by abutting end portions of said stator core,

said polyphase stator winding comprising a number of winding portions in which a pair of long strands of wire are wound such that each of the pair intercrosses each other to alternately occupy an inner layer and an outer layer in a slot depth direction within said slots at intervals of a predetermined number of slots, said strands of wire folding back outside said slots at axial end surfaces of said stator core, said number of winding portions being constructed with at least one wire-strand group formed by simultaneously bending and folding a plurality of said strands of wire, said wire-strand group being constructed by arranging at one slot pitch offset the same number of wire-strand pairs as said predetermined number of slots, each of said wire-strand pairs

AMENDMENT UNDER 37 C.F.R. § 1.116
Appln. No.: 09/624,222 .

Attorney Docket No.: Q60045

being constructed by arranging two strands of wire so that straight portions alternately overlap at a predetermined pitch, each of said strands of wire being formed into a pattern in which said straight portions are connected by turn portions so as to be arranged at a pitch of said predetermined number of slots and adjacent straight portions are offset so as to alternately occupy said inner layer and said outer layer in said slot depth direction, end portions of each of strands of wire respectively extending outwards at both sides of both ends of said wire-strand group, and

an insulating member being interposed between said stator core and said winding,
wherein said polyphase stator winding is constructed by connecting said end portions of said strands of wire which construct said wire-strand group installed in said stator core, said end portions extending outwards from said slot in both axial directions of said stator core.

joined to form one phase of stator winding group 161 having four turns connecting the first to fourth winding sub-portions 31 to 34 in series.

Page 16, paragraph 1:

Figures 28 (a) and (b) show Embodiment 7 of the present invention. In Embodiment 7, end portions of the teeth 51 defining the slots 36a of the base core 36 are pressed and plastically deformed after integration of the base core 36 and the wire-strand groups 35A and 35B, thereby dividing the base insulating members 72 and forming the insulating members 19 as the width dimensions of the opening portions 36bb of the slots 36 are being reduced. Thus a separate step of dividing the base insulating members 72 can be omitted.

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) An alternator comprising:
 - a rotor for forming north-seeking (N) and south-seeking (S) poles alternately about a rotational circumference; and
 - a stator comprising:
 - a stator core surrounding said rotor; and
 - a polyphase stator winding installed in said stator core,
 - said stator core being formed with a number of slots extending axially at a predetermined pitch in a circumferential direction and being provided with an abutting portion extending axially, said abutting portion making said stator core into an annular shape by abutting end portions of said stator core,

AMENDMENT UNDER 37 C.F.R. § 1.111
Appln. No.: 09/624,222

Q60045

said polyphase stator winding comprising a number of winding portions in which a pair of long strands of wire are wound so as to such that each of the pair intercrosses each other to alternately occupy an inner layer and an outer layer in a slot depth direction within said slots at intervals of a predetermined number of slots, said strands of wire folding back outside said slots at axial end surfaces of said stator core, and
an insulating member being interposed between said stator core and said winding.